

Department of Environmental Quality – Guidelines for the Preparation of Environmental Impact Assessment for Oil or Gas Well Drilling Operations in Tidewater Virginia

9VAC15-20-10. Definitions.

The following words and terms, when used in this chapter, shall have the following meanings, unless the context clearly indicates otherwise:

"Access road" means a paved or unpaved route or path from a public highway or public road to a well site or associated facility.

"Associated facilities" means any facility used for gas or oil operations in the Commonwealth, other than a well or well site.

"Chesapeake Bay Preservation Area" means an area delineated by a local government in accordance with "9VAC10-20-10: Chesapeake Bay Preservation Area Designation and Management Regulations" and §10.1-2109 of the Chesapeake Bay Preservation Act. A Chesapeake Bay Preservation Area consists of Resource Protection Areas and Resource Management Areas.

"Cuttings" means fragments of rock produced in a well bore by a drill bit and brought to the surface by drilling fluids or air pressure.

"Department of Environmental Quality" means the Department of Environmental Quality as described in §10.1-1182 et seq. of the Code of Virginia.

"Department of Mines, Minerals and Energy" means the Department of Mines, Minerals and Energy as described in §45.1-1.1 et seq. of the Code of Virginia.

"Director of the Department of Environmental Quality" means the Director of the Department of Environmental Quality or his authorized agent.

"Director of the Department of Mines, Minerals and Energy" means the Director of the Department of Mines, Minerals and Energy or his authorized agent.

"Drilling fluid" means any fluid or drilling mud circulated in the well bore during drilling operations.

"Economic characteristics" means activities associated with the production, distribution and consumption of goods and services.

"Enhanced recovery" means (i) any activity involving injection of any air, gas, water or other fluid into the productive strata, (ii) application of pressure, heat or other means for the reduction of viscosity of the hydrocarbons, or (iii) the supplying of additional motive force other than normal pumping to increase the production of gas or oil from any well, wells or pool.

"Environment" means the natural, scenic and historic attributes of Virginia.

"Environmental impact assessment" or "assessment" means that documentation which is required by §62.1-195.1 of the Code of Virginia to be a part of any application for a permit to drill an oil

or gas well in Tidewater Virginia.

"Exploratory well" means any well drilled (i) to find and produce gas or oil in an unproven area, (ii) to find a new reservoir in a field previously found to be productive of gas or oil in another reservoir, or (iii) to extend the limits of a known gas or oil reservoir.

"Facilities and equipment" means all infrastructure supporting the development, drilling, construction, completion or operation of any gas or oil operation including but not limited to well drilling equipment, well heads, separators, compressors, pumps, manifolds, vehicles, fluid circulation systems, waste handling facilities, storage tanks, valves, pipelines, etc., used to explore for, produce or transport oil or gas.

"Fiscal characteristics" means the structure of taxation, public revenue, public expenditure, and public debt.

"Gas" or "natural gas" means all natural gas whether hydrocarbon or nonhydrocarbon or any combination or mixture of them, including hydrocarbons, hydrogen sulfide, helium, carbon dioxide, nitrogen, hydrogen, casing head gas and all other fluids not defined as oil.

"Gas or oil operation" or "operation" means any activity relating to drilling, redrilling, deepening, stimulating, production, enhanced recovery, converting from one type of well to another, combining or physically changing to allow the migration of fluid from one formation to another, plugging or replugging any well, land disturbing activity relating to the development, construction, operation and abandonment of a gathering pipeline, the development, operation, maintenance and restoration of any site involved with gas or oil operations, or any work undertaken at a facility used for gas or oil operations. The term embraces all of the land or property that is used for or which contributes directly or indirectly to a gas or oil operation, including all roads.

"Gas well" means any well which produces or appears capable of producing a ratio of 6,000 cubic feet (6 Mcf) of gas or more to each barrel of oil, on the basis of a gas-oil ratio test.

"Gathering pipeline" means (i) a pipeline which is used or intended for use in the transportation of gas or oil from the well to a transmission pipeline or other pipeline regulated by the Federal Energy Regulatory Commission or the State Corporation Commission or (ii) a pipeline which is used or intended for use in the transportation of gas or oil from the well to an off-site storage, marketing, or other facility where the gas or oil is sold.

"Highly erodible soils" means soils (excluding vegetation) with an erodibility index (EI) from sheet and rill erosion equal to or greater than eight. The erodibility index for any soil is defined as the product of the formula $RKLS/T$, as defined by the Food Security Act (F.S.A.) Manual of August, 1988 in the "Field Office Technical Guide" of the U.S. Department of Agriculture, Soil Conservation Service, where K is the soil susceptibility to water erosion in the surface layer; R is the rainfall and runoff; LS is the combined effects of slope length and steepness; and T is the soil loss tolerance.

"Highly permeable soils" means soils with a given potential to transmit water through the soil profile. Highly permeable soils are identified as any soil having a permeability equal to or greater than six inches of water movement per hour in any part of the soil profile to a depth of 72 inches

(permeability groups "rapid" and "very rapid") as found in the "National Soils Handbook" of July 1983 in the "Field Service Technical Guide" of the U.S. Department of Agriculture, Soil Conservation Service.

"Historic properties" means any prehistoric or historic district, site, building, structure or object included in or eligible for inclusion in the National Register of Historic Places or the Virginia Historical Landmarks Register including any artifacts, records and remains that are related to and located within such properties.

"Historic properties survey" means a survey undertaken to establish the presence or absence of historic properties, and any related and necessary management plans developed to conserve such resources.

"Land-disturbing activity" means any change in or reconfiguration of the land surface or vegetation on the land surface through vegetation clearing or earth moving activities including but not limited to clearing, grading, excavating, drilling, transporting or filling.

"Mcf" means, when used with reference to natural gas, one thousand cubic feet of gas at a pressure base of 14.73 pounds per square inch gauge and at a temperature base of 60°F.

"Natural area preserve" means a natural area that has been dedicated pursuant to §10.1-213 of the Code of Virginia.

"Natural heritage resources" means the habitat of rare, threatened or endangered plant and animal species, rare or state significant natural communities or geologic sites, and similar features of scientific interest benefiting the welfare of the citizens of the Commonwealth.

"Natural heritage survey" means a survey undertaken to establish the presence or absence of natural heritage resources, and any related and necessary management plans developed to conserve such resources.

"Nontidal wetlands" means those wetlands other than tidal wetlands that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, as defined by the U.S. Environmental Protection Agency in response to §404 of the Federal Water Pollution Control Act, in 33 CFR 328.3b.

"Oil" means natural crude oil or petroleum and other hydrocarbons, regardless of gravity, which are produced at the well in liquid form by ordinary production methods and which are not the result of condensation of gas after it leaves the underground reservoir.

"Oil well" means any well which produces or appears capable of producing a ratio of less than 6,000 cubic feet (6 Mcf) of gas to each barrel of oil, on the basis of a gas-oil ratio test.

"Open space" means any land, water, or submerged land which is provided for, preserved for, or used for (i) park or recreational purposes, (ii) conservation of land or other natural resources, (iii) cultural, historic or scenic purposes, (iv) assisting in the shaping of the character, direction, and timing of community development, or (v) nontidal or tidal wetlands.

"Operations area" means the location of the well, well site, associated facilities, production

facilities, access roads, pipeline systems, and other related facilities and equipment necessary to the conduct of a gas or oil operation.

"Person" means any individual or group, any partnership, corporation, association, organization or other legal entity, including any public body.

"Pipeline systems" means all parts of those physical facilities through which gas or oil moves in transportation, including but not limited to pipes, valves, and other appurtenances attached to pipes such as compressor units, metering stations, regulator stations, delivery stations, holders, or other related facilities.

"Pipeline corridor" means those areas which pipeline systems pass through or will be constructed to pass through, including associated easements, leases, or rights-of-way.

"Production well" means a well, related production facilities and equipment and activities related to the drilling of a well for the purpose of developing and producing, or converting an exploratory well to develop or produce, oil or gas from geological strata for the purpose of sale, exchange, transfer or use by the owner or for the purpose of exchange, transfer, sale or use by any other person.

"Rare, threatened or endangered species" means any insect, fish, wildlife or plant species which is listed as, is a candidate for listing as, or is recommended for listing as a rare, threatened or endangered species by the U.S. Fish and Wildlife Service, the Department of Agriculture and Consumer Services, the Department of Game and Inland Fisheries, or the Department of Conservation and Recreation.

"Recreational resources" means the broad range of outdoor and indoor public and private areas and facilities, many of which are identified in the "Virginia Outdoors Plan," used in meeting Virginia's recreational needs including but not limited to public parks, public forests, natural areas, wildlife management areas, lakes and reservoirs, historic resources, trails, rivers, beaches, water access areas, Virginia byways, tidal and nontidal wetlands, and greenways.

"Scenic resources" means features which characterize an area by giving it a special visual identity or which present unique vistas or landscapes, including but not limited to such features as designated or candidate state or federal scenic rivers, federal or state scenic highways or parkways, Virginia byways, and scenic values as recognized by local, state or federal governments.

"Tidal wetlands" means "vegetated wetlands" and "nonvegetated wetlands" as defined in §62.1-13.2 of the Code of Virginia.

"Tidewater Virginia" means that area of Virginia as defined in §10.1-2101 of the Code of Virginia and the localities of Manassas and Manassas Park.

"Virginia Outdoors Plan" means the State Comprehensive Outdoor Recreation Plan developed and administered by the Department of Conservation and Recreation.

"Waste from gas, oil, or geophysical operations" means any substance other than gas or oil which is (i) produced or generated during or results from the development, drilling and

completion of wells and associated facilities or the development and construction of gathering pipelines or (ii) produced or generated during or results from well, pipeline and associated facilities' operations including, but not limited to, brines and produced fluids other than gas or oil. In addition, this term shall include all rubbish and debris, including all material generated during or resulting from well plugging, site restoration, or the removal and abandonment of gathering pipelines and associated facilities.

"Well" means any shaft or hole sunk, drilled, bored or dug into the earth or into underground strata for the extraction, injection or replacement of any gaseous or liquid substance, or any shaft or hole sunk or used in conjunction with such extraction, injection or placement. The term shall not include any shaft or hole, sunk, drilled, bored, or dug into the earth for the sole purpose of pumping or extracting therefrom potable, fresh or usable water for household, domestic, industrial, agricultural, or public use and shall not include water boreholes, methane drainage boreholes where the methane is vented or flared rather than produced and saved, subsurface boreholes drilled from the mine face or an underground coal mine, any other boreholes necessary or convenient for the extraction of coal or drilled pursuant to a uranium exploratory program carried out pursuant to the laws of this Commonwealth, or any coal or nonfuel mineral core hole or borehole for the purpose of exploration.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §1.1; eff. November 3, 1993.

9VAC15-20-20. Authority.

This chapter implements §62.1-195.1 of the Code of Virginia which requires the Department of Environmental Quality to develop criteria and procedures to assure the orderly preparation and evaluation of environmental impact assessments for gas or oil well drilling operations in Tidewater Virginia.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §1.2; eff. November 3, 1993.

9VAC15-20-30. Purpose.

The purpose of this chapter is to set out criteria and procedures to be followed by gas or oil well drilling permit applicants when preparing environmental impact assessments and by the Department of Environmental Quality, other state agencies, local government officials, and the public when reviewing environmental impact assessments. It is intended to foster the development of useful information which is presented in a manner that assists the Department of Environmental Quality, appropriate state agencies, planning district commissions, potentially

affected local governments, and the public in understanding, analyzing and making decisions about the potential environmental, fiscal or economic impacts associated with drilling an oil or gas well in Tidewater Virginia and related production and transportation activities.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §1.3; eff. November 3, 1993.

9VAC15-20-40. Applicability.

The environmental impact assessment requirements and criteria apply to all oil or gas well drilling operations, whether an exploratory well or a production well, proposed to occur in Tidewater Virginia. Any person proposing to drill an exploratory well or production well in Tidewater Virginia shall submit to the Department of Mines, Minerals and Energy, as part of his application for a permit to drill such a well, an environmental impact assessment.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §1.4; eff. November 3, 1993.

9VAC15-20-50. General information requirements.

A. The environmental impact assessment is to contain information on and a discussion of the elements outlined in the following sections of this regulation. Discussions should be no longer than necessary to fully explain the issues and potential impacts in a given topical area. Data and analyses should be commensurate with the degree of impact.

B. An environmental impact assessment shall contain a title page; an executive summary; a table of contents; a list of figures; a list of tables; a list of maps and plats; the main body of the report as outlined in this regulation; a list of preparers; a topical index; an annex containing a list of local, state, or federal permits that are applicable to the proposed operations; and other annexes as needed. The executive summary shall summarize the assessment focusing on the major conclusions; the potential environmental, fiscal and economic impacts; and avoidance, minimization or mitigative measures proposed to address environmental, fiscal and economic impacts.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §1.5; eff. November 3, 1993.

Part II

Information Requirements

9VAC15-20-60. Description of the gas or oil operation.

A. The applicant shall describe the gas or oil operation to be performed. The description of the operation should include information on the location, size (length, height, width and area), and number of such facilities and related land requirements (including easements or rights-of-way). The information should also include a timetable for establishing, completing and removing drilling operations and constructing, operating and removing production facilities.

B. The discussion of the operation shall be accompanied by:

1. A general location map depicting the operations area and surrounding areas at a map scale which is as detailed or more detailed than a map at a scale of 1:24,000; and

2. Detailed site plats of the proposed operations area at a scale no greater than 1:600 depicting the location of:

a. Proposed land-disturbing activities;

b. Facilities and equipment, pipeline corridors, and natural resource features discussed in 9VAC15-20-70 that can be graphically presented and that will be or could be affected by the proposed operation; and

c. Any existing manmade features within the proposed operations area, including but not limited to buildings, water wells, roads, drainage ditches, ponds, etc.

C. The description of the operation shall include a discussion of the following:

1. The type of drilling operation;

2. Power systems, energy or fuel sources necessary for drilling and associated facilities equipment operation;

3. Fluid circulation systems including a discussion of and a list of the proposed drilling fluids, fluid components, toxicity classification, and information on the projected amount and rate of drilling fluid production;

4. Well control and blowout prevention devices including a description of the proposed methods of containment of potential oil, gas or waste fluid releases;

5. Any proposed utility connections for water supply or sewage disposal purposes;

6. Projected types, quantities, and chemical characteristics of waste from gas, oil or geophysical operations, including any planned surface water or groundwater emissions referencing where possible information available from previous gas or oil operations conducted in Tidewater Virginia;

7. Projected types, quantities, and chemical characteristics of solid wastes produced by the

operation referencing where possible information from previous gas or oil operations conducted in Tidewater Virginia;

8. Proposed on-site and off-site solid and liquid waste management procedures including waste transfer areas and procedures, disposal areas or facilities, handling facilities and equipment, storage areas and related facilities and equipment, and proposed methods of disposal whether by land application, burying, injection or by other means;

9. Any planned enhanced recovery activities related to the production of gas or oil from the proposed well;

10. Projected air emissions by source, quantity, chemical characteristics, and duration resulting from the proposed operation on an average daily basis referencing where possible information available from previous gas or oil operations conducted in Tidewater Virginia;

11. Methods which will be used to acquire necessary water supplies to conduct the proposed operation including the amount of daily withdrawals, daily or weekly fluctuations in withdrawal rates, duration of withdrawals, and any effects on stream flow, how much water will be needed to support the operation, and how such water supplies will be used in the proposed operation;

12. Descriptions, presented in narrative and graphic format as appropriate, of proposed erosion and sediment control practices and stormwater management practices which will be installed to manage surface water quality;

13. Descriptions, presented in narrative and graphic format as appropriate, of proposed site reclamation and revegetation plans for all operations areas; and

14. Descriptions of proposed gas or oil production and transportation facilities and equipment.

D. A description of land-disturbing activities which will result from the proposed operation should include a discussion of the size, extent and location of activities including the following activities:

1. The clearing of vegetation, including a description of the types of vegetation to be cleared;

2. Land grading and filling activities;

3. Constructing new or expanded access roads;

4. Constructing fluid reserve pits, sumps, dikes, tanks or similar devices;

5. Constructing associated facilities whether inside or outside of the operations area;

6. Constructing and installing pipeline systems including proposed trenching, earth-moving, or vegetation clearing activities; and

7. Constructing and installing gas or oil production facilities and equipment.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.1; eff. November 3, 1993.

9VAC15-20-70. Description of the environment and natural resource features potentially affected by the gas or oil operation.

A. The discussion under this part shall include a description of the existing environment and natural resource features which will be or may be affected by the gas or oil operation and how they will be or may be affected. The analysis of the environment and natural resource features shall encompass, at the minimum, any area located within 1320 feet of a proposed well and within 100 feet of proposed pipeline systems or associated facilities unless the applicant for the permit to drill can demonstrate that a smaller impact analysis area is appropriate given the nature and location of the proposed gas or oil operation and the potential impact of such an operation on the environment and natural resources. The 1320-foot distance is half of the statewide well spacing requirement set out for gas wells in §45.1-361.17 of the Code of Virginia and will ensure that the impact analysis for wells established in Tidewater Virginia at the statewide spacing will be tangential. The 100-foot distance from pipelines and associated facilities will ensure that Chesapeake Bay Preservation Areas or other environmentally sensitive resources that may be affected by the oil or gas operation will be detected. The potential for impacts by the proposed oil or gas operation on natural resource features and the environment which are located outside of the 1320-foot impact analysis area for wells and the 100-foot impact analysis area for pipeline systems and associated facilities shall also be considered and discussed. The discussion shall be supported with graphic information in the form of a plat or plats at a scale between 1:1000 and 1:4000 showing the location of natural resources that will be or may be affected by the proposed operation. The discussion shall include, but not be limited to:

1. Physical site conditions such as:

- a. Topographical features including relief, slope, project area elevation, and landscape features such as beaches, sand dunes, shorelines, etc.;
- b. Surface water hydrology and drainage patterns including locations of embayments, rivers or streams and related subaqueous beds, tidal or nontidal wetlands, and the 100-year floodplain in the watershed potentially affected by the proposed operation;
- c. Existing surface water quality characteristics and how water quality may be affected by emissions from the proposed operation;
- d. Existing air quality and how air quality may be affected by emissions from the proposed operation;
- e. Geological conditions such as groundwater hydrogeology, including the depths to the top and bottom of groundwater aquifers; general characteristics of the geologic strata to be penetrated by drilling activities; and a discussion of the possibility for land subsidence and any potential impacts associated with land subsidence which may result from the operation;
- f. A description of the existing water quality of groundwater aquifers which will be or may be affected by drilling activities or liquid waste disposal activities focusing particularly on the

potability of water in potentially affected aquifers and the extent to which identified aquifers are currently used as domestic or community water supplies;

g. A discussion of the soil types on which an operation will be located including an identification of prime agricultural lands, highly permeable soils, highly erodible soils, and soil profile descriptions of each representative soil series on the well site to a depth of 72 inches;

h. The identification and location of any public water supply intakes within the watershed where an operation will occur and located within 10 miles downstream of the proposed well site; or any public or private water supply wells located within a one-mile radius of the proposed oil or gas well drilling operation; and

i. Chesapeake Bay Preservation Areas, both Resource Protection Areas (RPAs) and Resource Management Areas (RMAs), located within 1320 feet of the proposed operations area.

2. Biological conditions and resources including but not limited to:

a. A description of the terrestrial and aquatic habitat types and associated flora and fauna, including any natural heritage resources which are documented by performing a natural heritage survey in conformance with methodologies established by the Department of Conservation and Recreation, and any rare, threatened or endangered species present;

b. A description of the use patterns of terrestrial habitat by wildlife including areas such as nesting, roosting, breeding and calving areas or other unique natural habitat;

c. A description of the use patterns of freshwater, estuarine and marine habitat by terrestrial and aquatic species, including but not limited to submerged aquatic vegetation, fish spawning areas, shellfish beds, habitat of anadromous fish and other finfish, and benthic organisms; and

d. State Wildlife Management Areas, State Natural Area Preserves, National Wildlife Refuges, or elements of Virginia's National Estuarine Research Reserve System or other unique or important natural communities.

3. Culturally important areas such as historical, open space, and recreational resources, including those resources listed in the Virginia Outdoors Plan, including but not limited to:

a. Historic properties which are documented by performing a historic properties survey in conformance with guidelines established by the Department of Historic Resources;

b. Public beaches;

c. Scenic resources;

d. Public water access sites;

e. Local, state, or national parks, recreational areas, open space, or forests;

f. State-owned or state managed lands;

g. Federally-owned or federally managed lands;

h. Easements held for agricultural, forestal, open space, horticultural or other conservation purposes; and

i. Prime agricultural lands as identified by the U.S. Soil Conservation Service and important farm lands as identified by the Virginia Department of Agriculture and Consumer Services.

B. Describe the typical noise levels currently existing at the proposed operations areas. Describe any operation activities that will produce noise over 65 decibels measured at the boundary of the operations area, the source and daily duration of those activities producing the noise, and the estimated external noise level at the nearest noise receptor such as a residence, school, hospital, business, public meeting place, feature identified in the Virginia Outdoors Plan, or wildlife habitat. The applicant should describe what measures, if any, will be taken to reduce projected exterior noise levels below 65 decibels at the nearest receptor.

C. Describe any activities associated with the operation that will produce light or glare within the operations area after sundown and before dawn. Describe the hours that artificial lighting sources will exist, including flaring of wells, gas processing facilities, or production facilities, the intensity of any light sources, and the time such light sources would be in operation. Describe the potential aesthetic, nuisance, safety, or environmental hazards that light or glare may produce outside of the operations area. Describe what steps, if any, that will be taken to minimize light or glare.

D. Describe the actions and measures that will be taken to avoid, minimize, and mitigate impacts on natural, scenic, recreational, and historic resources identified in the assessment. The assessment shall also discuss irrevocable or irreversible losses of the natural resources identified in the assessment.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.2; eff. November 3, 1993.

9VAC15-20-80. Procedures for estimating the probability of a discharge.

The assessment shall provide an analysis of the probabilities of accidental discharges of oil, condensate, natural gas, and waste from gas, oil or geophysical operations or liquids being released into the environment during drilling, production, and transportation due to well blowout, equipment failure, transportation accidents and other reasons. Such an analysis shall include calculations based upon generally accepted engineering failure analysis procedures. An applicant shall calculate a spill probability analysis for three sizes of discharge events -- minor, moderate, or major. The applicant shall define the categories of minor, moderate or major discharge and describe the sources of information used to formulate the analyses and the assumptions used to construct the analyses. Discharge probability analyses for minor discharges should include calculations for a discharge that would not be expected to escape the operations area.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.3; eff. November 3, 1993.

9VAC15-20-90. Procedures for determining the consequences of a discharge.

The environmental impact assessment shall include a description of potential environmental and natural resource effects associated with discharges including the consequences of a discharge on finfish, shellfish and other marine or freshwater organisms; birds and other wildlife; air and water quality; land and water resources; and including the specific environmental and natural resource features listed in 9VAC15-20-70. The analysis should be specific to the proposed operation, the proposed location of the operation, and the natural resources in the vicinity of the proposed operation. The spill analysis shall be completed for oil, condensate, waste from gas, oil or geophysical operations or fluids, and natural gas discharges resulting from minor, moderate or major discharges as defined and described pursuant to the requirements of 9VAC15-20-80.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.4; eff. November 3, 1993.

9VAC15-20-100. Spill release and contingency planning.

A. The environmental impact assessment shall describe procedures which will be developed and implemented to prepare for, equipment which will be installed to detect and respond to, and facilities and equipment which will be installed or available to contain minor, moderate and major discharges of oil, condensate, natural gas, waste from gas, oil, or geophysical operations or fluids as defined pursuant to the requirements of 9VAC15-20-80 as well as fires or other hazards to the environment. A discharge contingency plan prepared in conformance with the requirements of the State Water Control Board's regulation entitled "Oil Discharge Contingency Plans and Administrative Fees for Approval" (9VAC25-90-10 et seq.) will fulfill the information requirement of this section.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.5; eff. November 3, 1993.

9VAC15-20-110. Hydrogen sulfide release contingency planning.

A. A discussion of the potential for encountering hydrogen sulfide shall be included in the assessment. The assessment shall discuss steps that will be taken, if any, to respond if indicators of such gas are encountered, if there exists a potential for a release of hydrogen sulfide gas, or in

the event of a hydrogen sulfide release.

B. A hydrogen sulfide release contingency plan should address the following:

1. Methods and devices that will be used to detect hydrogen sulfide gas to prevent the gas from becoming an environmental concern. Include a description of detection equipment to be used and equipment testing and calibration procedures.
2. Operating procedures to be employed if the operations area atmospheric concentration of hydrogen sulfide gas reaches limits established by the Department of Labor and Industry in "VR 425-02-36 Air Contaminants (1910.1000)" and including a discussion of:
 - a. Appropriate emergency notification procedures for local residents, emergency service and medical personnel;
 - b. Notification procedures for responsible regulatory agencies; and
 - c. Appropriate visual and audible warning systems for atmospheric hydrogen sulfide gas within the operations area.
3. The potential for continuous low-level hydrogen sulfide emissions (one hour average) to result in concentrations in areas of public access above levels deemed harmful to human health in accordance with the State Air Pollution Control Board's "Emission Standards for Toxic Pollutants (9VAC5-40-160 through 9VAC5-40-230)" and "Standards of Performance for Toxic Pollutants (9VAC5-50-160 through 9VAC5-50-230)."

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.6; eff. November 3, 1993.

9VAC15-20-120. Economic impacts.

A. Describe the potential impacts of the proposed operation on the economic characteristics of the affected locality and, as necessary, surrounding localities. The information should address how these economic characteristics will be affected during (i) the drilling and construction phases of the operation, and (ii) the production phases of the operation. In all projections constructed by the applicant, the methodology for constructing projections and the assumptions, calculations and computations used to formulate projections should also be presented and described.

B. The description should include information on the following conditions:

1. An analysis of the potential positive or negative effects of the proposed operation on the current population with regard to potential changes in the demographic structure of the locality according to age, income and employment characteristics;
2. An analysis of the projected employment levels including estimates of the variation in

employment levels over time for (i) the drilling and construction phases of the operation, including the construction of pipeline systems, associated facilities and production facilities, and (ii) the production phases of the proposed operation. Indicate whether any new positions created by the proposed construction and operations activities may be or will be filled from the labor pool available in the affected locality or in neighboring localities;

3. The types of services that can be provided from businesses located in the affected locality or in surrounding localities. Include a general estimate of the amount of contract awards that will be or could be made available to service providers in the affected locality and neighboring localities and the projected duration of service contracts;

4. The existing land uses, including residential, forestal, agricultural, commercial, industrial, urban, suburban, open space, recreational or other land use characteristics within the locality that will be affected, changed or which may be subject to change as a result of the proposed operation. The discussion shall be supported with graphic information in the form of a plat or plats of existing land uses within 1320 feet of the well and within 100 feet of associated facilities and pipeline systems at a scale between 1:1000 and 1:4000; and

5. The locality's affected industrial and commercial bases and economic conditions with emphasis on dominant economic sectors (i.e., agriculture, forestry, fishing and aquaculture, service industries, and industrial activities). Special attention should be given to the tourism and recreation industries and how they may be affected by the operation. Describe how the proposed location of the operation may adversely affect or displace other natural resource-based commercial activities and enterprises in the affected locality or in neighboring localities such as agriculture, fishing, tourism, forestry, etc.

C. Describe the actions and measures that will be taken to avoid impacts, minimize impacts, and mitigate unavoidable impacts on economic characteristics identified in the assessment. The assessment should also discuss irreversible impacts on or commitments of local economic resources based upon impacts identified in the assessment.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.7; eff. November 3, 1993.

9VAC15-20-130. Fiscal impacts.

A. The assessment should present an analysis of the existing fiscal characteristics, revenue structure, and physical infrastructure in the county, city, or town where the proposed operation is to be located to the extent they may be affected by the proposed operation. The applicant should identify measures that may need to be undertaken in order to maintain or expand the services, revenue sources, expenditure levels and capital facilities of the affected local government due to the proposed operation. As appropriate, the applicant should describe any new, upgraded or expanded infrastructure and capital facilities that will be necessary to support the proposed operation, estimates how much improvements may cost and the person or persons who will be

responsible for providing necessary infrastructure or capital facility improvements. In all projections of potential effects on infrastructure and related fiscal impacts, methodologies for constructing projections, related assumptions, calculations and computations used to formulate projections should also be presented and described.

B. The assessment should address the following fiscal and infrastructure elements:

1. The transportation systems including roads, railroads or existing oil or gas pipelines that are available to support the operation and how they will be affected by the proposed operation. The discussion should include an estimate of the number of vehicle trips that will be generated on the transportation system, the size of any operational support vehicles, and the design capacity of affected roads relative to the projected size, weight and volume of vehicle traffic. Identify any new transportation system needs, including pipeline systems and roads, necessary to meet the demands of the proposed operation and how the applicant will develop or assist in developing and upgrading necessary transportation systems;

2. Infrastructure and capital facility support systems available including utility services, water services, sewer services, solid waste disposal services and facilities, etc. and the projected demands the proposed operation will place on such systems and their existing capacity to respond to that demand. Identify any needed upgrades or expansion of related infrastructure, equipment or services, estimate the cost of providing upgrades, and describe how the applicant will assist in providing resources to meet such needs;

3. The availability of public safety and health services such as hospitals, emergency rescue services, police and fire services and related infrastructure and the capacity to respond to accidents or incidents that may result from the gas or oil operation. Identify any needed upgrades or expansion of related infrastructure, equipment or services, estimate the cost of providing upgrades, and describe how the applicant will assist in providing resources to meet such needs;

4. The distribution of existing temporary and permanent housing units within the locality and whether these will be adequate to accommodate the projected influx of the operation workers. Discuss how any need for temporary housing may affect existing land uses. Also, discuss how any projected housing needs will be met by the applicant if available units are insufficient to meet the projected housing demand; and

5. The public service needs, including but not limited to educational services, recreational needs, and social services, that will be generated by the immigration of laborers into the affected locality in support of the operation. Discuss the capacity of these services and whether the existing capacity is sufficient to handle the projected population increase. If the existing capacity is projected to be insufficient to meet anticipated needs, the applicant should explain what measures will be necessary to address increased service needs.

C. Describe the actions and measures that will be taken to avoid, minimize, and mitigate impacts on fiscal characteristics identified in the assessment associated with the expansion or development of infrastructure to support the proposed operation.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §2.8; eff. November 3, 1993.

Part III

Information Requirements for Evaluating Secondary Environmental Impacts

9VAC15-20-140. Examination of secondary environmental impacts due to induced economic development.

Based on the analysis of potential economic impacts identified in 9VAC15-20-120, and fiscal impacts identified in 9VAC15-20-130, examine and discuss the potential secondary environmental affects of induced economic development due to the proposed operation. Such analysis should include impacts associated with any new infrastructure development provided to support the gas or oil operation including but not limited to the construction of new roads, pipeline systems, sewers, schools, water supplies, public services, waste handling facilities, housing units, etc., on natural, scenic, open space, recreational, and historic resources.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §3.1; eff. November 3, 1993.

Part IV

Department of Environmental Quality and General Public Review and Comment Procedures

9VAC15-20-150. Department of Environmental Quality notification by the Department of Mines, Minerals and Energy.

Upon receiving a permit application to drill an oil or gas well in Tidewater Virginia, the Director of the Department of Mines, Minerals and Energy shall notify the Director of the Department of Environmental Quality that a coordinated review of an environmental impact assessment must be initiated. The applicant shall provide the Department of Mines, Minerals and Energy with 17 copies of the environmental impact assessment and the Department of Mines, Minerals and Energy will deliver the copies to the Director of the Department of Environmental Quality. The 90-day review process will begin upon receipt of the appropriate number of copies of the environmental impact assessment by the Director of the Department of Environmental Quality.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §4.1; eff. November 3, 1993.

9VAC15-20-160. Initiation of assessment review by state and local agencies and by the general public.

A. The Department of Environmental Quality shall prepare and submit a general notice for publication in the Virginia Register within three days of the receipt of an environmental impact assessment. The availability of an assessment shall be given public notice, paid for by the applicant, by publication in a newspaper having a general circulation in the locality where drilling is proposed. The Department of Environmental Quality shall also develop a mailing list containing the names of persons who indicate they want to be notified about the availability of oil or gas environmental impact assessment documents and will forward a copy of the general notice submitted for publication in the Virginia Register to those persons on the mailing list.

B. The general notice will contain the following information:

1. The proposed location of the operation including the name of the locality and other general descriptive information regarding the location of the proposed operation;
2. A general description of the proposed operation;
3. The deadline for the general public to submit written comments, which shall not be less than 30 calendar days after publication of the notice;
4. A designated location where the environmental impact assessment can be reviewed;
5. A contact person from whom additional information can be obtained on the environmental impact assessment; and
6. An address for mailing comments on an assessment to the Department of Environmental Quality.

C. The Department of Environmental Quality shall submit copies of the environmental impact assessment to the chief executive officer of the affected local government, to the executive director of the affected Planning District Commission, and to other state or local agencies requesting a copy of the assessment. State agency comments shall be returned to the Department of Environmental Quality as soon as possible but no later than 50 calendar days after receiving a copy of an assessment from the Department of Environmental Quality.

D. The Department of Environmental Quality may hold a public information hearing on an impact assessment. Such a public hearing, if any, shall be held during the public comment period in the locality in which the operation is proposed. Notice of such a hearing, including the date, time, and location of the meeting, will be announced in a general notice published in the Virginia Register and in a notice mailed to persons on the mailing list.

Statutory Authority

§§10.1-1188 et seq. and 62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §4.2; eff. November 3, 1993.

9VAC15-20-170. Review of comments.

The Director of the Department of Environmental Quality shall review all written state agency, local government, planning district commission, and public comments and any written or oral comments received during any public hearing. Based on the review by the Director of the Department of Environmental Quality of written comments, oral and written comments received at public hearings, and the environmental impact assessment, the Director of the Department of Environmental Quality will prepare and submit a written report of its findings and recommendations to the Director of the Department of Mines, Minerals and Energy. The findings and recommendations of the Director of the Department of Environmental Quality on an assessment will be available for public inspection at the offices of the Department of Environmental Quality.

Statutory Authority

§62.1-195.1 of the Code of Virginia.

Historical Notes

Derived from VR304-02-01 §4.3; eff. November 3, 1993.

DOCUMENTS INCORPORATED BY REFERENCE

Virginia Outdoors Plan, Department of Conservation and Recreation, 1989.
